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AUTHOR Taylor, Lorne J.
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ABSTRACT

This study examines the relationship between family environment and children's language ability. Language is examined on the basis of a model which specifies that the following characteristics of family environments influence language development most: quality of language usage of the mother, opportunities for the enlargement and use of vocabulary and sentence patterns, and parents' keeness for correct and effective language usage. Twenty middle class and twenty lower class children were administered the Illinois Test of Psycholinguistic Abilities and the Wechsler Intelligence Scale for Children. An interview was conducted with mothers. Results show that the middle SES group scored significantly higher than the lower SES group on the language test, and had a greater press for language development in the home. However, it was found that social status variables were as effective as the environmental process characteristics in predicting language ability. An alternative model is suggested for future research which specifies that family environments should be analyzed according to the stimuli parents provide, the nature of the reinforcement for appropriate performance, and parents' expectations for a child's performance. (Author/JM)

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FAMILY ENVIRONMENTS AND LANGUAGE SKILLS

Lorne Taylor Ph. D.

Institute for Research in Human Abilities
Memorial University of Newfoundland

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FAMILY ENVIRONMENTS AND LANGUAGE SKILLS

A number of investigators have examined both family environments and the relationship between family environments and children's intelligence. Overall the most successful attempts to develop and operationalize a model of family environments have been provided by Dave (1963) and Wolf (1964) as well as others (Mosychuk, 1969; Majoribanks, 1970, Keeves, 1972). The measures developed by Dave (1963) and Wolf (1964) have become widely accepted and utilized by a number of researchers. Essentially the family environment is seen as consisting of a series of forces or presses which influence the individual. The researchers have attempted to identify the environmental presses that relate to specific behavioral characteristics. These presses represent ongoing environmental process variables in the family in contrast to more static family variables, such as father's occupation, which are viewed as symptoms of environmental forces rather than actual forces. It should be noted that to operationalize the process variables a number of specific, measurable process characteristics for each process variable have been identified. The following process variables and characteristics have been identified by Wolf (1964):

Press for Achievement

a) nature of intellectual aspirations of the child

b) nature of intellectual aspirations for the child

c) amount of information about the child's intellectual development

d) nature of rewards for intellectual accomplishment

Press for Language Development

a) emphasis on language in a variety of situations

b) opportunities provided for enlarging vocabulary

c) emphasis on correctness of usage

d) quality of language models available

Press for General Learning

a) opportunities provided for learning in the home

b) opportunities provided for learning outside the home(excluding school)

c) availability of learning supplies

d) availability and encouragement of use of books

e) nature and amount of assistance provided to facilitate learning in a variety of situations

Essentially what Wolf has done is to identify family characteristics from the literature and aggregate them into composites called environmental process characteristics (EPC). The EPC's are then further aggregated into environmental process variables (EPV) as illustrated above. The EPV's are the environmental forces and are considered to be the major dimensions of family environment. The measures developed from this framework are highly reliable and account for respectable proportions of the variance in the dependent variables of interest. Essentially the family environment models developed by other researchers are similar to Wolf's.

The present research is particularly interested in the effects that family environment has on the development of linguistic abilities. The importance of the acquisition of a verbal facility in children can not be over estimated. Bruner (1956), Bernstein (1962), Bereiter and Engelmann (1966), Taylor and Skanes (1975, 1976) and Taylor et al.(1974) have shown the significance of language facility in educational achievement. The language retarded child is at a clear disadvantage in the present school system. Further it is important to recognize that the disadvantaged child does not make significant gains in ability once he enters school. He only falls further behind the advantaged child. This phenomenon has come to be

called cumulative deficiency, in which small deficiencies at an early age lead to inferior learning which in turn increases the magnitude of deficiency. Since a child develops much of his language capability in the preschool years the quality of his language usage to a large part depends upon the kind of language models available to him. Language develops, from the babble period, in a number of different directions depending upon the way persons respond to the child's first attempts at speech. Thus if the environmental variables that contribute to the development of language can be isolated an important contribution will have been made to the research.

The present research examines language on the basis of the model developed by Dave (1963). He argues that the following characteristics are the main determinants, in the family environment, that influence the development of language:

a) quality of language usage of the mother (EPCA)

b) opportunities for the enlargement and use of vocabulary and sentence patterns (EPCB)

c) keenness of the parents for correct and effective language usage (EPCC)

Other than some initial work done by Jones (1971) the researchers have concentrated to the largest extent on the relationship between family environment and intelligence and school achievement of children. Jones, however, examines family environment and linguistic skills. However, all the research suffers from a serious methodological problem, in that the researchers conducted their studies using samples of grade 5 children. No effort was made to control the effects of schooling on the development of intellectual and linguistic abilities. Since school may be an important determiner of intellectual and language ability it is inappropriate to examine Grade 5 subjects and make the assumption that the family environment is still the determining force in the development of abilities. It is much more

appropriate to examine abilities in children who have had little or no exposure to formal schooling if an accurate picture of the influences of family environment is to be obtained.

METHOD

Subjects

As stated previously one of the faults of earlier research was that it used Grade 5 students. To avoid this the present sample consisted of Grade 1 students and their families. The families were interviewed and the sample tested during September 1975. The sample was chosen from two small towns in Newfoundland. Twenty of the students were from homes of relatively low S.E.S. status (Peterview). The other twenty children were from largely middle class homes (Botwood). Detailed data regarding the families are presented in Table 1.

Insert Table 1 about here

Measures

To measure language abilities all children were administered the Illinois Test of Psycholinguistic Abilities. This is an individual test which provides one of the better estimates of language skills. The sample was also administered the Wechsler Intelligence Scale for Children - Revised.

To measure family environments an interview scale based on the work of Dave (1963) was used. Every family was visited by a skilled interviewer and interviewed in depth regarding the family environment.

Analysis

As the purpose of the research was to examine the nature of differences in abilities and home environments of the groups a multivariate analysis of

variance was conducted. Tukey "b" tests were also calculated. As well correlations were calculated between the variables and a multiple regression analysis was conducted.

Results and Discussion

As can be seen in Table 1 there are significant differences in the family background variables other than mother's occupation. Mother's occupation was not significantly different in the two communities because of the fact that the mothers were almost all housewifes. The other family variables that were examined were the three process characteristics associated with language development. As shown in Table 1 there are significant differences favoring the Botwood sample in these as well. Also, as shown in Table 2 the Botwood sample scores significantly higher on all but one of the language

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Insert Table 2 about here

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variables. Thus children from homes that score highest on language process variables and have appropriate models to follow develop more adequate linguistic skills than children from homes where the appropriate models are not so readily avialable. However, this is a far too simplistic interpretation of the present data as the groups differ on a number of other family variables as well. In an effort to provide an analysis of those variables which were the best predictors of the dependent variable, correlations were calculated and a regression analysis conducted. The intercorrelations between variables are presented in Table 3 and a number of findings are of interest. For instance all the variables, other than sex, correlate highly

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Insert Table 3 about here

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with the composite psycholinguistic age (CPLA). Further, if the intercorrelations are examined it can be seen that the variables other than sex intercorrelate quite highly. There are specific intercorrelations that are quite interesting as well. For instance, the negative correlation between number of children and the three EPC variables indicates the relationship between family size and the language press of the home. That is, the larger the family the lower will be the quality of language models. Another interesting relationship represented in Table 3 is the correlation between quality of language usage of the mother and mother's education, indicating, as might be expected, that the higher the mother's education the higher the quality of the language usage.

In an attempt to discover which of the variables or combination of variables was the best predictor of language abilities a regression analysis was undertaken. It should be noted that because of the relatively small sample size the results of the regression analysis must be viewed with some caution. However the adjusted "R" square reported is a more accurate estimate of the variance accounted for than just an "R" square. The regression analysis was undertaken in the following fashion. The full model was used as the first step in the analysis. Further analyses were conducted by dropping one variable from the analysis while retaining the others. This was continued until each variable had been dropped from the full model. The adjusted "R" square for the full model was 0.72. By eliminating one of the independent variables while retaining the others, the adjusted "R" square ranged from 0.70 to 0.72. In an effort to determine the overall effects of the EPC's the three variables were combined and dropped from the model. This only reduced the adjusted "R" square to 0.69

Similar findings were discovered for all variables but one, intelligence. When intelligence was omitted from the model the adjusted "R" square was reduced to 0.57. It would be expected that the WISC-R scores would account for a significant amount of the variance as it is so highly correlated with the I.T.P.A. In future analysis it is planned to drop the verbal subscales and use only several of the performance subscales as a measure of intelligence. This may reduce the correlation between the measures of language and intelligence somewhat and reduce the amount of variance accounted for by the intelligence measure. Other than intelligence, then, the other family variables contribute about equally to the predictive efficiency of the model.

The results of the present research are somewhat surprising. It was expected that adding the home's press for language ability would increase the predictive efficiency of the model. However, the EPC variables appear to contribute little more to the model than variables, such as father's occupation, generally considered to be only gross indicators of the family environment. The data indicate that for the present sample the so-called gross indicators of family environment are as good a predictor of language abilities of the children as in-depth interviews with families regarding the language characteristics of the home. Hence Dave's (1964) model is not applicable to the present sample.

In an effort to provide an explanation for these findings a recent unpublished paper by Williams (1974) offers some useful suggestions. Williams (1974) argues that the press theory models of family environment provided by Dave (1963) and others are inappropriate. They are neither parsimonious nor valid. Rather, Williams argues that family environments should be organized around three dimensions:

a) the stimuli parents provide in the form of opportunities to interact with a wide range of material

b) the nature of the reinforcement for appropriate performance

c) the expectations parents hold for a child's performance

Williams re-examines the data provided by a number of researchers and concludes the social learning model he proposes provides the best data-model fit. However Williams' model has not yet been operationalized. If Williams is correct in suggesting that the press theory of family environments is inappropriate this may account for the present results which indicate that press for language developement is no better a predictor of language ability in children than father's occupation. It is necessary in future research to operationalize and test Williams' model to discover if the stimuli, reinforcement and expectation dimensions contribute substantially to the predictive efficiency of family environment models.

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TABLE 1

Means for Family Variables

	Botwood	Peterview
Father's Occupation	41.93	27.48*
Mother's Occupation	25.06	24.00
Father's Education.	12.00	7.00*
Mother's Education	11.40	6.39*
Number of Children	3.40	6.33*
Number of Children at Home	3.20	6.11*
E P C A	6.15	3.82*
E P C B	5.35	3.68*
E P C C	5.37	3.63*

* $P < .05$

TABLE 2

Means for I.T.P.A. Raw Scores

	Botwood	Peterview
Auditory Reception	25.15	14.90*
Visual Reception	17.30	13.65
Visual Sequential Memory	18.95	15.25*
Auditory Association	22.15	13.55*
Auditory Sequential Memory	25.90	18.70*
Visual Association	18.85	12.40*
Visual Closure	23.75	18.40*
Verbal Expression	23.25	15.60*
Grammatic Closure	17.75	11.40*
Manual Expression	24.70	19.45*

* $P \leq 0.05$

TABLE 3

CORRELATIONS BETWEEN VARIABLES

	C	S	W	FO	FE	ME	CH	CHO	EPC A	EPC B	EPC C
CPLA	0.72248	0.00085	0.81411	0.45651	0.61916	0.68370	-0.56010	-0.58807	0.64679	0.64478	0.65903
C		0.11158	0.78078	0.57445	0.67694	0.71683	-0.57066	-0.59437	0.57843	0.65198	0.56204
S			0.17174	-0.04097	0.07553	0.06903	-0.04992	0.00342	0.07207	0.01593	0.10656
W				0.33945	0.56457	0.67759	-0.62059	-0.58560	0.51307	0.59124	0.61333
FO					0.78689	0.56724	-0.42376	-0.46215	0.61606	0.51652	0.50913
FE						0.77350	-0.67266	-0.67954	0.66210	0.55391	0.61642
ME							-0.63976	-0.67077	0.77996	0.63290	0.62543
CH								0.97535	-0.51150	-0.47288	-0.63208
CHO									-0.56917	-0.48757	-0.66042
EPC A										0.63063	0.58869
EPC B											0.74175

CPLA = Composite Psycholinguistic Age
C = Community
S = Sex
W = WISC
FO = Father's Occupation
FE = Father's Education
ME = Mother's Education
CH = Number of Children
CHO = Number of Children at Home
EPC A = Quality of language usage of parents
EPC B = Opportunities for the enlargement and use of Vocabulary
EPC C = Keenness of parents for correct language usage